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Andrew David Boddy

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EXAMINER

MULLER, BRYAN R

ART UNIT

PAPER NUMBER

3727

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/537,382	<b>Applicant(s)</b> BODDY ET AL.	
	<b>Examiner</b> BRYAN R. MULLER	<b>Art Unit</b> 3727	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-6,8-14,16-19,21-26,29 and 31-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,8-14,16-19,21-26,29 and 31-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 April 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 29 and 31, as well as claims 4-6, 8-14, 16-19, 21-26, 32 and 33, which depend therefrom, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation that the tool element (or brush bar) may be removed without disturbing the position of the drive mechanism is not supported in the original application in a manner to suggest that the limitation was definitively provided by the structure set forth in the original application or to support that any or all of the embodiments reading on the pending claims (Figures 9-13) will provide the claimed function. Although many of the embodiments provide structure that *may* allow the tool element to be removed without disturbing the positioning of the drive mechanism, most of the embodiment would also just as easily cause the belt and or pulley(s) to move when the tool element is removed. Thus, the amended claims are not considered to be fully supported by the original application.

### ***Claim Rejections - 35 USC § 103***

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-6, 8-10, 13, 16-19, 21-26, 29 and 31-33 rejected under 35 U.S.C. 103(a) as being unpatentable over Hampton et al. (5,414,8893) in view of Weber et al. (2002/0104185).

5. In reference to claims 1 and 31, Hampton discloses a head for a suction cleaner having a lower housing portion (22), an upper housing portion (20) movable relative to the lower housing portion between a closed position for use and an open position in which airflow passages within the head are opened from above, wherein the head is provided with at least one catch (31) to retain the upper housing portion in the closed position and releasable to move the upper housing portion into the open position and a rotatably mounted tool element (26) which is entirely exposed from above and in front of the tool element and readily removable when the upper housing portion is in the open position wherein the tool element is driven by a drive mechanism (24, 66, 76) comprising a drive belt (76) having internal and external surfaces. However, Hampton fails to disclose that the drive belt does not pass around the tool element or that the tool element is driven by the external surface of the drive belt. Weber discloses another head for a suction cleaner having several different embodiments for rotatable tool element(s) within the head, including one embodiment having a single tool element that is rotated by a belt that extends around the tool element (Fig. 1), similar to the head of

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Hampton. Weber further teaches in an alternative embodiment, that the single rotatable element driven by an encompassing belt is a known equivalent in the art to a pair of rotatable elements, parallel to one another and driven by a belt, wherein one of the tool elements does (116) not have the belt passing around the tool element and is driven by direct contact between an external surface of the belt engaging the tool element (embodiments of Fig. 12). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the tool element and drive mechanism of Hampton may be replaced by the pair of tool elements in the alternative embodiment of Weber, as a known equivalent in the art, and to provide a second tool element to increase the effectiveness of the cleaning head, such that there will be at least one tool element that does not have the belt passing around it and is driven by an external surface of the belt, as taught by Weber. Further, it would be obvious that a user may remove the tool element in an upward direction by lifting the end opposite the drive mechanism upward and rotating the tool element to remove the end engaging the drive mechanism from beneath the drive mechanism or by a similar movement lifting the opposite end forward and rotating the tool element from beneath the drive belt, thus making the tool element removable in an upward direction and from above and in front of the drive belt wherein, although removing the tool element *may* create slack in the belt, the driving pulleys and idler gears would obviously remain in position and the belt *may* also substantially remain in the same position such that the positioning of the driving mechanism may be considered to be undisturbed because the driving mechanism would remain in a desired position.

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6. In reference to claim 4, Hampton further discloses that the head does not have a sole plate (Col. 2, lines 44-48).

7. In reference to claims 5 and 6, Hampton further discloses that the upper housing, in combination with the lower housing defines an airflow opening that is adjacent to the ground and has the tool element located therein when the upper housing is in a closed position.

8. In reference to claim 8 and 9, Hampton further discloses that the airflow paths within the housing and the drive mechanism are accessible for cleaning and maintenance when the upper housing is in the open position.

9. In reference to claim 10, Hampton further discloses that the tool element is readily removable without the use of any tool.

10. In reference to claim 13, Hampton and Weber both further disclose that the drive mechanism includes an electric motor (24 or 106, respectively) within the head.

11. In reference to claim 16, Weber further discloses (in Fig. 12) that the drive mechanism includes a drive pinion provided on the tool element, wherein the drive belt is toothed on its external surface and engages the drive pinion.

12. In reference to claims 17 and 18, Weber further discloses that a circumferential drive surface (99 in Fig. 11) in the form of a pulley is provided on the tool element and that the external surface of the belt has a cross-section which cooperates with the pulley. The term "pulley" is defined as "a wheel driven by or driving a belt or the like, used

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to deliver force to a machine”<sup>1</sup>. In this case, the outer circumference (99) of tool element (96) that engages the belt is circular and thus, may be considered to be a wheel, which is driven by the belt to deliver rotational force to the tool element. Therefore, the drive surface (99) of Weber is considered to be a pulley. Further, any cross-section taken of the belt will include at least a portion of the external surface of the belt, which cooperates with the pulley. Thus, the cross-section of the belt clearly cooperates with the pulley.

13. In reference to claim 19, Weber further disclose that the drive mechanism includes an electric motor (106) that drives a drive shaft engaging a drive belt, wherein the drive shaft is connected to and extends axially from the motor. However, Weber fails to specifically disclose that the drive shaft is a pinion (shaft with teeth). Weber further discloses different embodiments wherein the drive belt engaging the tool element is either directly or indirectly engaged by the drive shaft on the motor and embodiments wherein the drive belt is either toothed or smooth. Therefore, it further would have been obvious to one of ordinary skill in the art at the time the invention was made that one of the embodiments having a toothed drive belt, such as Fig. 12, may alternatively have a drive shaft that directly engages the drive belt, wherein it would be obvious to provide the drive shaft with teeth to more efficiently engage the toothed surface of the belt. Thus, it may have been obvious for the drive shaft extending axially from the motor to be a pinion.

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<sup>1</sup> *Dictionary.com Unabridged (v 1.1)*

*Based on the Random House Unabridged Dictionary, © Random House, Inc. 2006.*

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14. In reference to claim 21, Weber further discloses that the drive belt is toothed on its internal surface, as discussed supra, passes around and engages with the motor pinion, as shown in Fig. 12.

15. In reference to claims 22, 32 and 33, in the embodiment of Fig. 12, Weber discloses that the tool element may be driven by the belt passing around a drive pinion such that the internal surface of the drive belt engages the drive pinion or alternatively that the tool element may be driven by an external surface of the drive belt engaging the drive pinion wherein the drive belt does not pass around the tool element such that the tool elements rotate in opposite directions. Therefore, Weber teaches that a drive belt may engage pinions of a drive mechanism with the inner or outer surface. Therefore, it further would have been obvious that the drive mechanism of Weber may alternatively be configured such that the motor pinion engages an outer surface of the drive belt to rotate the drive belt in an opposite direction for different applications, to adapt the drive mechanism to fit in different sized heads, or to provide a driving mechanism for tool elements having different locations relative to the motor. Thus, it would have been obvious that the motor pinion of Weber may alternatively engage the toothed outer surface of the drive belt.

16. In reference to claim 23, Weber further discloses that the drive mechanism includes a motor (106) having a drive wheel (shaft 104 or wheel 100 may be considered to be drive wheels in Fig. 12) which frictionally engages the drive belt.



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17. In reference to claim 24, Weber further discloses that the drive mechanism further includes a support wheel (112) around which the drive belt passes, and which holds the drive belt adjacent to and in engagement with the tool element.

18. In reference to claim 25, it is further obvious that the support wheel is freely rotatable to reduce any drag or resistance on the drive belt that may reduce the efficiency of the drive mechanism.

19. In reference to claim 26, Weber further discloses that the support wheel (112) is a gear, and thus, obviously has teeth, which may also be considered to be a pinion.

20. In reference to claim 29, the combination of Hampton and Weber provides the vacuum head, as discussed supra, and Weber further discloses another alternate embodiment wherein the brush bar (tool element) is driven by a drive mechanism comprising a series of gears, wherein the brush bar is rotated without any component passing around the brush bar (Fig. 13). Therefore, it alternatively would have been obvious to one of ordinary skill in the art at the time the invention was made that the tool element and drive mechanism of Hampton may be replaced by the pair of tool elements in the alternative embodiment of Fig. 13 of Weber, as a known equivalent in the art, and to provide a second tool element to increase the effectiveness of the cleaning head, such that the brush bar (tool element) is driven by a drive mechanism comprising a series of gears, wherein the brush bar is rotated without any component passing around the brush bar. Further, the brush bar could be removed from above and in front of the drive mechanism by first moving the tool element in a forward direction (parallel to the rotational axis of worm gear 128) and then lifting the brush bar upwardly, thus removing

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the brush bar from above and in front of the drive mechanism without disturbing the positioning of the drive mechanism.

21. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hampton et al. (5,414,8893) in view of Weber et al. (2002/0104185) as applied to claims 1 and 9 and further in view of Stone (3,924,085).

22. In reference to claims 11 and 12, the combination of Hampton and Weber discloses the head for a suction cleaner of claims 1 and 9, as discussed supra, but fails to disclose that a switch is provided to prevent the drive mechanism from being operated when the upper housing portion is in the open position. However, it is old and well known for appliances and tools, especially those that are mass produced for commercial sale, to have some form of disconnect switch to prevent electrical shock or injury due to moving parts to users when an access panel or door is in an opened position for maintenance or repair. Stone discloses a safety start device for domestic appliances wherein a switch (32) is provided on part of the housing, which will disconnect power to the components of the appliance to prevent operation when the door (14) of the appliance is in an opened position such that a user may contact moving parts in order to prevent injury to a user from contacting the moving components of the appliance. Further, the safety device of Stone provides the movable access door (14) with a protrusion (40) from an inner portion of the door, which contacts the switch (32) when the access door is moved to the closed position to allow the components of the appliance to operate when the door is closed. Therefore, it further would have been

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obvious to one of ordinary skill in the art at the time the invention was made to provide the head of Hampton with a similar safety device, as disclosed by Stone, to prevent a user from being shocked or injured due to user contact with exposed or moving components. Thus, it would have been obvious to provide the switch of Stone to the lower housing portion of Hampton and to provide the upper housing portion (equivalent of the access door of Stone) with a protrusion that will only contact the switch when the upper housing portion is in the closed position.

23. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hampton et al. (5,414,8893) in view of Weber et al. (2002/0104185) as applied to claims 1 and 9 and further in view of Worwag (2001/0008036).

24. In reference to claim 14, the combination of Hampton and Weber discloses the head for a suction cleaner of claims 1 and 9, as discussed supra, but fails to disclose that a turbine may be provided within the head. Worwag discloses a head for a suction cleaner having a rotatably mounted tool element that is driven by a drive mechanism and Worwag teaches that the power may be provided to the drive mechanism to drive the tool element by a turbine (12) that is positioned within the airflow path of the head or alternatively may be driven by an electric motor (paragraph 11). Therefore, it further would have been obvious to one of ordinary skill in the art at the time the invention was made that the electric motor in the drive mechanism of Hampton and Weber may alternatively be replaced by a turbine that is positioned within the airflow paths of the

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head with an external source of suction or that a separate turbine may be provided in the path of the suction flow to drive the rotatable tool element, as taught by Worwag.

### ***Response to Arguments***

25. Applicant's arguments filed 5/26/2009 have been fully considered but they are not persuasive. The applicant argues that the drive unit embodiment of Fig. 12 of Weber does not read on the claim limitations for the drive mechanism in claims 1 and 31 because the applicant suggests that any movement of the rotatable tool element (116) would move the belt and allow slack in the belt and that the belt would block a user from removing the tool element in an upward direction or from above and in front of the drive belt. However, as stated above, the limitation that the tool element may be removed without disturbing the positioning of the drive mechanism is not supported by the original application and the Weber reference would obviously be capable of removal of the tool element in an upward direction by lifting the end opposite the drive mechanism upward and rotating the tool element to remove the end engaging the drive mechanism from beneath the drive mechanism or by a similar movement lifting the opposite end forward and rotating the tool element from beneath the drive belt, thus making the tool element removable in an upward direction and from above and in front of the drive belt. Further, although removing the tool element *may* create slack in the belt, the driving pulleys and idler gears would obviously remain in position and the belt *may* also substantially remain in the same position. Alternatively, the "idler gears" (108 and 112) are commonly known as functioning to press against a belt to take up slack (defined as

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“a pulley riding loosely on a shaft, pressing against a belt to guide it or take up the slack”<sup>2</sup>) wherein the idler gears would take up any slack and effectively maintain a desired positioning of the drive mechanism. Therefore, it would be obvious, even if the claim limitations were supported by the original application, that the drive mechanism of Weber, in combination with the suction head of Hampton would read on all of the claimed structure set forth in the independent claims 1 and 31. The applicant also makes arguments regarding the embodiment of Fig. 11 of Weber, which is no longer applied to the rejections and is therefore moot. The applicant further argues that the drive unit embodiment of Fig. 13 of Weber does not read on the claim limitations for the drive mechanism in claim 29 because the applicant suggests that any movement of the rotatable brush bar (136) would require movement of the worm gear (128). However, similar to the embodiment of Figure 12 of Weber, the brush bar could be removed from above and in front of the drive mechanism by first moving the tool element in a forward direction (parallel to the rotational axis of worm gear 128) and then lifting the brush bar upwardly, thus removing the brush bar from above and in front of the drive mechanism without disturbing the drive mechanism. Therefore, even if all of the new limitations added to the amended claims were properly supported by the original application, the Examiner maintains that the prior art of record makes obvious all of the claim limitations set forth in the claims, as discussed supra.

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<sup>2</sup> Webster's New World College Dictionary Copyright © 2005 by Wiley Publishing, Inc., Cleveland, Ohio. Used by arrangement with John Wiley & Sons, Inc.

***Conclusion***

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McCormick (6,226,832), Leathers (1,968,530), Bass (1,833,961), Carson (1,829,582), Allgeier et al. (6,513,190), Kajihara (5,659,919), Kramer et al. (5,651,362), Becker (2,253,997), Hampton et al. (5,414,893), Burrage (2,910,721), Fillery (3,482,276), Gage (2,482,166) and Magarian (2,963,270) all disclose vacuum heads or cleaning apparatuses having similar structure and/or function as the applicant's claimed invention.

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN R. MULLER whose telephone number is (571)272-4489. The examiner can normally be reached on Monday thru Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica S. Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bryan R Muller/  
Primary Examiner, Art Unit 3727  
8/7/2009